

## Sequence Listing

<110> Baker, Kevin Botstein, David Eaton, Dan Ferrara, Napoleone Filvaroff, Ellen Gerritsen, Mary Goddard, Audrey Godowski, Paul Grimaldi, Christopher Gurney, Austin Hillan, Kenneth Kljavin, Ivar Napier, Mary Roy, Margaret Tumas, Daniel Wood, William

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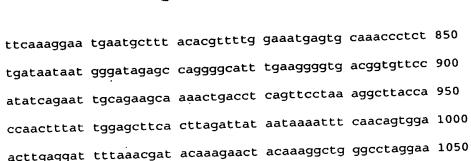
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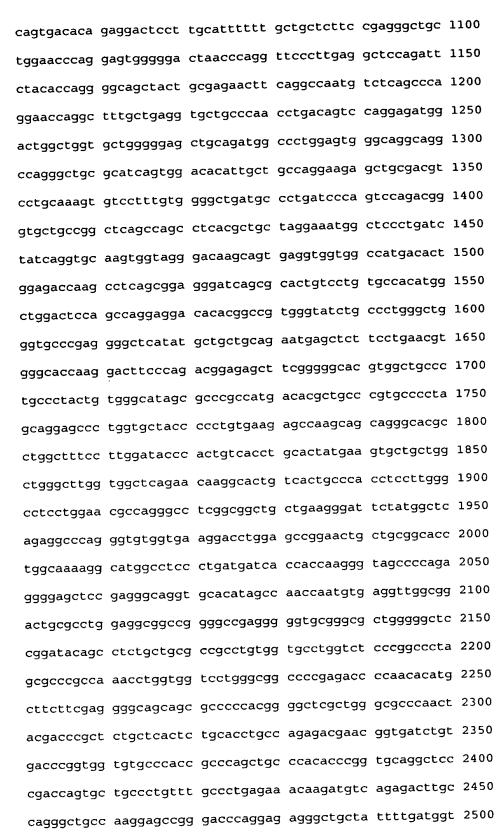
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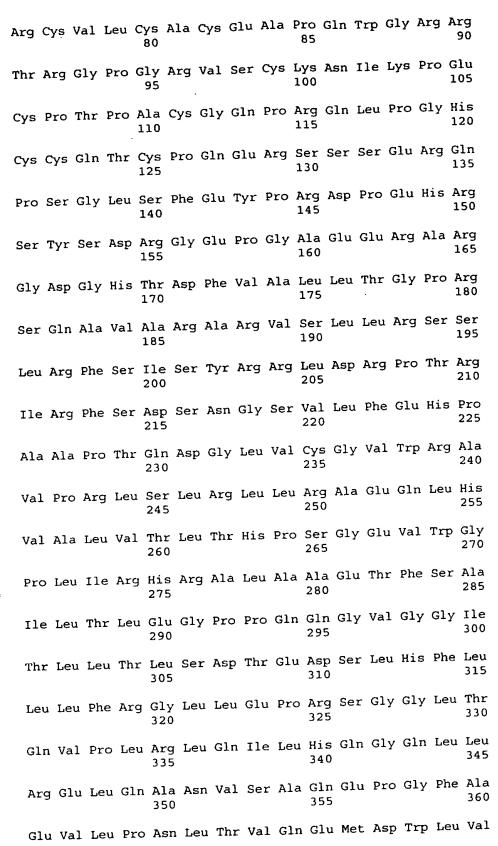
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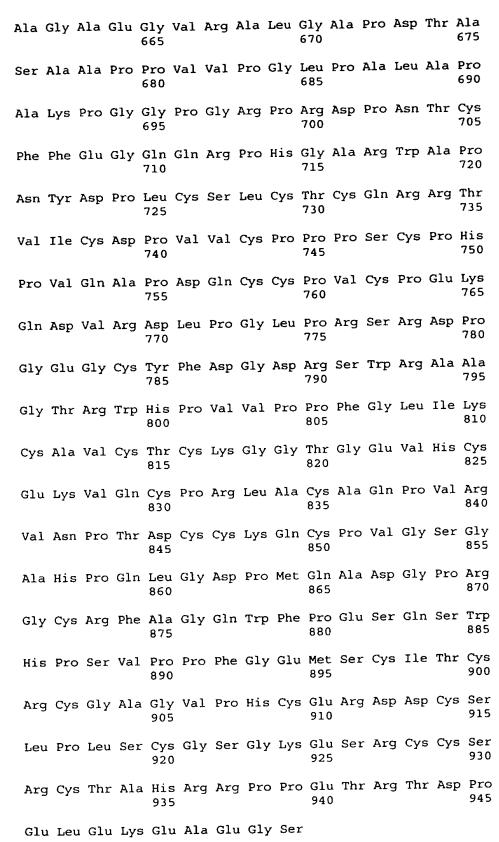
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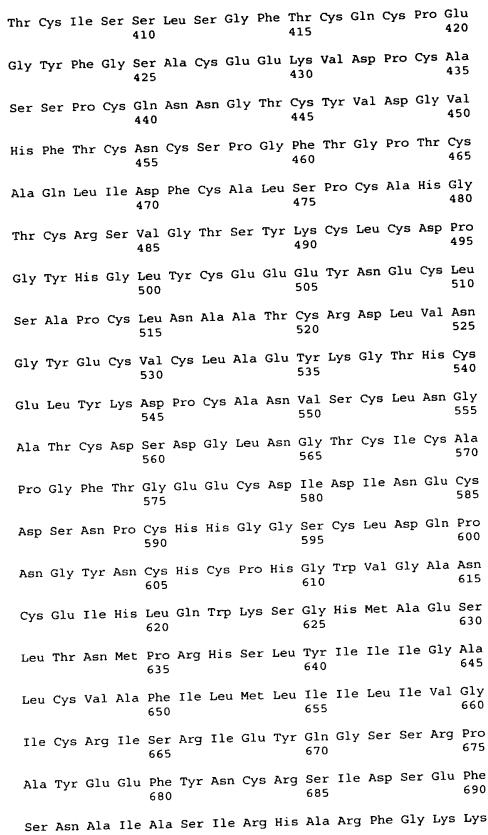
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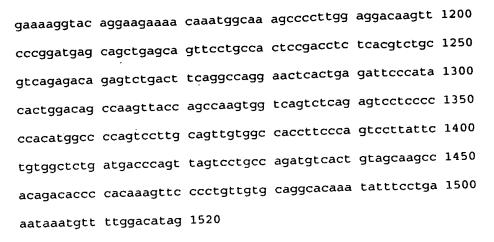
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Val Tyr Gln Lys Gly Leu Gln Asp Val Asn Leu Arg Asn Phe Ser 55

Tyr Gly Gln Thr Ser Leu Asp Arg Leu Arg Asp Gly Leu Val Gly

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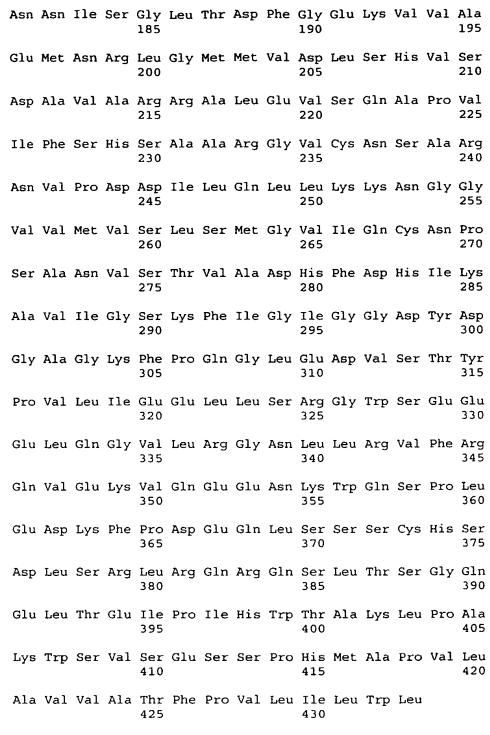
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Tyr Met Leu Gly Val Arg Tyr Leu Thr Leu Thr His Thr Cys Asn 160 155

Thr Pro Trp Ala Glu Ser Ser Ala Lys Gly Val His Ser Phe Tyr 175 170



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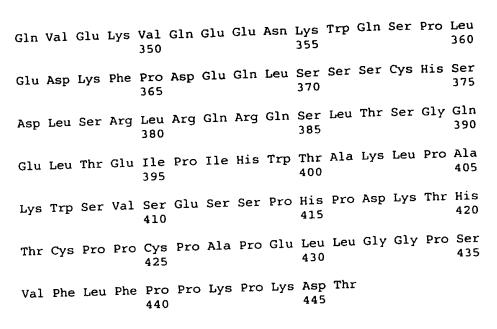
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Val Tyr Gln Lys Gly Leu Gln Asp Val Asn Leu Arg Asn Phe Ser

!	50	55	$\epsilon$	50
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Asp Ala Leu Arg L	eu Thr Le 95	u Glu Gln Ile A 100	sp Leu Ile Arg A	rg 05
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Thr Pro Trp Ala	Glu Ser So 170	er Ala Lys Gly \ 175	/al His Ser Phe T	Tyr 180
Asn Asn Ile Ser	Gly Leu T 185	hr Asp Phe Gly (	Glu Lys Val Val A	Ala 195
Glu Met Asn Arg	Leu Gly M 200	et Met Val Asp 205	Leu Ser His Val :	Ser 210
Asp Ala Val Ala	Arg Arg A 215	la Leu Glu Val 220	Ser Gln Ala Pro	Val 225
Ile Phe Ser His	Ser Ala A	la Arg Gly Val 235	Cys Asn Ser Ala	Arg 240
Asn Val Pro Asp	Asp Ile I 245	eu Gln Leu Leu 250	Lys Lys Asn Gly	Gly 255
Val Val Met Val	Ser Leu S 260	Ser Met Gly Val 265	Ile Gln Cys Asn	Pro 270
Ser Ala Asn Val	Ser Thr 1 275	Val Ala Asp His 280	Phe Asp His Ile	Lys 285
Ala Val Ile Gly	Ser Lys 290	Phe Ile Gly Ile 295	Gly Gly Asp Tyr	Asp 300
Gly Ala Gly Lys	Phe Pro	Gln Gly Leu Glu 310	Asp Val Ser Thr	Tyr 315
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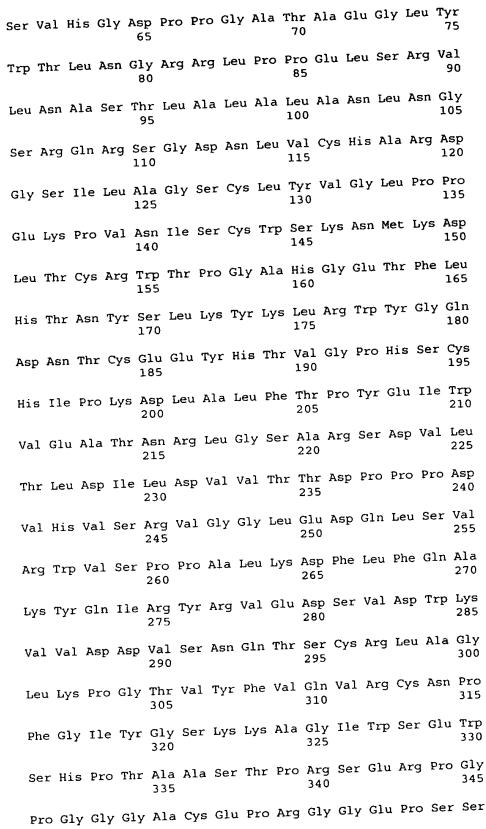
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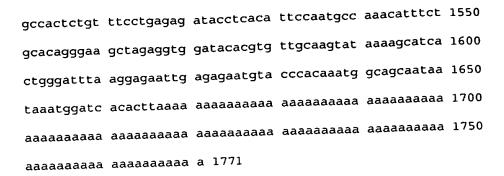
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His Gly Ile Gly Arg Leu Thr Ala Tyr Glu Phe Ala Lys Leu Lys

Ser Lys Leu Val Leu Trp Asp Ile Asn Lys His Gly Leu Glu Glu

Thr Ala Ala Lys Cys Lys Gly Leu Gly Ala Lys Val His Thr Phe

Val Val Asp Cys Ser Asn Arg Glu Asp Ile Tyr Ser Ser Ala Lys

Lys Val Lys Ala Glu Ile Gly Asp Val Ser Ile Leu Val Asn Asn

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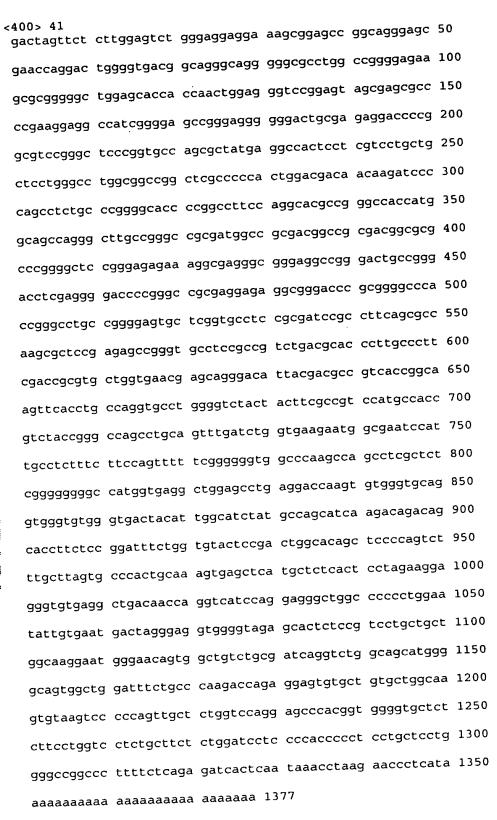
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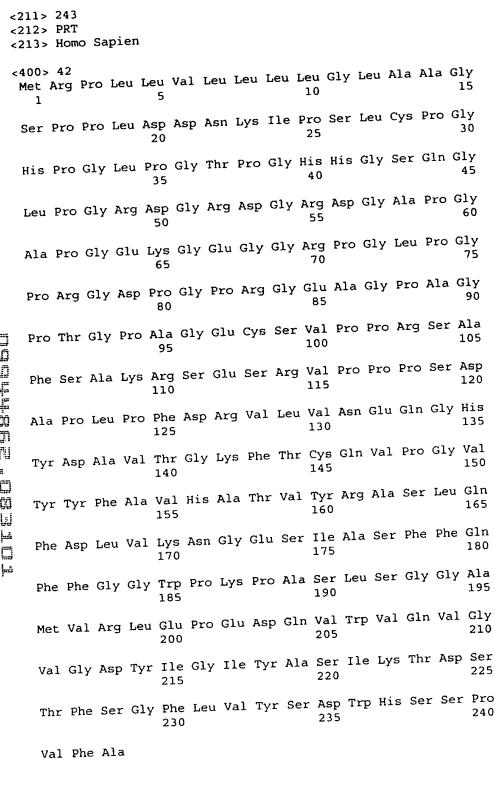
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Ile	Lys	Asn	Pro	Ser 230	Thr	Ser	Leu	Gly	Pro 235	Thr	Leu	Glu	Pro	Glu 240
Glu	Val	Val	Asn	Arg 245	Leu	Met	His	Gly	11e 250	Leu	Thr	Glu	Gln	Lys 255
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Arg	Ile	Leu	Pro	Glu 275	Arg	Phe	Leu	Ala	Val 280	Leu	Lys	Arg	Lys	Ile 285
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Lys Glu Ser Phe Leu Leu Leu Ser Leu His Asn Arg Leu Arg Ser

Trp Val Gln Pro Pro Ala Ala Asp Met Arg Arg Leu Asp Trp Ser

Asp Ser Leu Ala Gln Leu Ala Gln Ala Arg Ala Ala Leu Cys Gly

Ile Pro Thr Pro Ser Leu Ala Ser Gly Leu Trp Arg Thr Leu Gln 95

Val Gly Trp Asn Met Gln Leu Leu Pro Ala Gly Leu Ala Ser Phe

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His Ala Ala Gly	Glu Cys Ala 140	Arg Asn A	Ala Thr Cys Th 145	r His Tyr 150
Thr Gln Leu Val	Trp Ala Thr	Ser Ser (	Gln Leu Gly Cy 160	s Gly Arg 165
His Leu Cys Ser	Ala Gly Gln 170	Thr Ala	Ile Glu Ala Ph 175	ne Val Cys 180
Ala Tyr Ser Pro	Gly Gly Asn 185	Trp Glu	Val Asn Gly Ly 190	ys Thr Ile 195
Ile Pro Tyr Lys	Lys Gly Ala	Trp Cys	Ser Leu Cys T 205	hr Ala Ser 210
Val Ser Gly Cys	Phe Lys Ala 215	a Trp Asp	His Ala Gly G 220	ly Leu Cys 225
Glu Val Pro Arg	Asn Pro Cys 230	s Arg Met	Ser Cys Gln A 235	sn His Gly 240
Arg Leu Asn Ile	e Ser Thr Cy 245	s His Cys	His Cys Pro F 250	Pro Gly Tyr 255
Thr Gly Arg Ty	r Cys Gln Va 260	l Arg Cys	Ser Leu Gln ( 265	Cys Val His 270
Gly Arg Phe Ar	275		280	
Tyr Gly Gly Al	290		293	
Thr Cys Asp Le	305		310	
Glu Ala Asp Th	320		523	
Gly Gly Val Le	335		340	
Leu Ala Phe Ty	350		333	
Asp Ser Asp Pl	365		370	
Lys Thr Ala L	380		303	
Ala Phe Thr S	er Phe Ala P 395	he Gly Gli	n Pro Asp Asn 400	His Gly Let 405

Val Trp Leu Ser Ala Ala Met Gly Phe Gly Asn Cys Val Glu Leu 410 Gln Ala Ser Ala Ala Phe Asn Trp Asn Asp Gln Arg Cys Lys Thr 430 425 Arg Asn Arg Tyr Ile Cys Gln Phe Ala Gln Glu His Ile Ser Arg 445 440 Trp Gly Pro Gly Ser 455 <210> 51 <211> 24 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 51 aggaacttct ggatcgggct cacc 24 <210> 52 <211> 24 C <212> DNA <213> Artificial Sequence FFO <223> Synthetic oligonucleotide probe <220> (Ji <400> 52 gggtctgggc caggtggaag agag 24 <210> 53 Ŭ <211> 45 <212> DNA IJ <213> Artificial Sequence ä <220> <223> Synthetic oligonucleotide probe gccaaggact cetteegetg ggccacaggg gagcaccagg cette 45 <210> 54 <211> 2331 <212> DNA <213> Homo Sapien cggacgcgtg ggctgggcgc tgcaaagcgt gtcccgccgg gtccccgagc 50 <400> 54 gtcccgcgcc ctcgccccgc catgctcctg ctgctggggc tgtgcctggg 100 gctgtccctg tgtgtggggt cgcaggaaga ggcgcagagc tggggccact 150 cttcggagca ggatggactc agggtcccga ggcaagtcag actgttgcag 200

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Asp Gly Leu Arg Val Pro Arg Gln Val Arg Leu Leu Gln Arg Leu

Lys Thr Lys Pro Leu Met Thr Glu Phe Ser Val Lys Ser Thr Ile

Ile Ser Arg Tyr Ala Phe Thr Thr Val Ser Cys Arg Met Leu Asn

Arg Ala Ser Glu Asp Gln Asp Ile Glu Phe Gln Met Gln Ile Pro

Ala Ala Ala Phe Ile Thr Asn Phe Thr Met Leu Ile Gly Asp Lys 100

Val Tyr Gln Gly Glu Ile Thr Glu Arg Glu Lys Lys Ser Gly Asp 115 110

Arg V	/al L	ys Gl	lu Ly 12	s Ar	g As	n Ly	ys T	hr 1	Thr 130	Glu	Glu	Asn G	Sly G	35
Lys (	Gly T	hr G	lu II 14	le Ph 10	e Ar	g A	la S	er l	Ala 145	Val	Ile	Pro S	Ser I	Lys L50
Asp 1	Lys A	la A	la Pl	ne Ph 55	e Le	eu S	er T	yr (	Glu 160	Glu	Leu	Leu (	Gln i	Arg 165
Arg 1	Leu G	ly L	ys T	yr G] 70	lu H:	is S	er 1	[le	Ser 175	Val	Arg	Pro (	Gln (	Gln 180
Leu	Ser (	Sly A	rg L	eu Se 85	er V	al A	sp /	Val	Asn 190	Ile	Leu	Glu	Ser	Ala 195
Gly	Ile A	Ala S	er L 2	eu G	lu V	al I	eu !	Pro	Leu 205	His	Asn	Ser	Arg	Gln 210
Arg	Gly :	Ser G	Sly A	rg G	ly G	lu A	Asp .	qaA	Ser 220	Gly	Pro	Pro	Pro	Ser 225
Thr	Val	Ile F	Asn G	Sln A 230	sn G	lu 1	Thr	Phe	Ala 235	Asn	Ile	Ile	Phe	Lys 240
Pro	Thr	Val '	Val (	Gln G 245	ln A	Ala A	Arg	Ile	Ala 250	Gln	Asn	Gly	Ile	Leu 255
Gly	Asp	Phe	Ile :	Ile <i>F</i> 260	rg T	ſyr .	Asp	Val	Asn 265	a Arg	Glu	Gln	Ser	Ile 270
Gly	Asp	Ile	Gln '	Val I 275	∟eu 2	Asn	Gly	Tyr	Phe 280	e Val	His	Tyr	Phe	Ala 285
Pro	Lys	Asp	Leu	Pro 1 290	Pro	Leu	Pro	Lys	Ası 29	n Val	l Val	l Phe	Val	Leu 300
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Phe	e Ser	Ile	Ile	Gly 335	Phe	Ser	Asn	Arg	34	e Ly 0	s Va	l Trp	) Ly:	345
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Ту	r Ile	His	His	Met 365	Ser	Pro	Thr	Gl;	y Gl 37	y Th	r As	p Il	e As	n Gly 375
Ala	a Leu	Gln	Arg	Ala 380	Ile	Arg	Lev	ı Le	u As 38	sn Ly 35	/ѕ Ту	r Va	l Al	a His 390
Se	r Gly	/ Ile	Gly	Asp 395	Arg	Ser	Va:	l Se	r Le	eu I:	le Va	al Ph	e Le	u Thr 405
As	p Gly	, Lys	Pro	Thr	Val	Gly	/ Gl	u Th	r H	is T	hr Le	eu Ly	s Il	e Leu

410 415 420
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Ile Gly Ile Gly Asn Asp Val Asp Phe Arg Leu Leu Glu Lys Leu 440 445
Ser Leu Glu Asn Cys Gly Leu Thr Arg Arg Val His Glu Glu 465
Asp Ala Gly Ser Gln Leu Ile Gly Phe Tyr Asp Glu Ile Arg Thr 470 475 480
Pro Leu Leu Ser Asp Ile Arg Ile Asp Tyr Pro Pro Ser Ser Val 485 490 495
Val Gln Ala Thr Lys Thr Leu Phe Pro Asn Tyr Phe Asn Gly Ser 500 505
Glu Ile Ile Ala Gly Lys Leu Val Asp Arg Lys Leu Asp His 525 525
Leu His Val Glu Val Thr Ala Ser Asn Ser Lys Lys Phe Ile Ile 530 535
Leu Lys Thr Asp Val Pro Val Arg Pro Gln Lys Ala Gly Lys Asp 545 550 555
Val Thr Gly Ser Pro Arg Pro Gly Gly Asp Gly Glu Gly Asp Thr 560 565 570
Asn His Ile Glu Arg Leu Trp Ser Tyr Leu Thr Thr Lys Glu Leu 585
Leu Ser Ser Trp Leu Gln Ser Asp Asp Glu Pro Glu Lys Glu Arg 590 595 600
Leu Arg Gln Arg Ala Gln Ala Leu Ala Val Ser Tyr Arg Phe Leu 615 610
Thr Pro Phe Thr Ser Met Lys Leu Arg Gly Pro Val Pro Arg Met 620 625 630
Asp Gly Leu Glu Glu Ala His Gly Met Ser Ala Ala Met Gly Pro 645
Glu Pro Val Val Gln Ser Val Arg Gly Ala Gly Thr Gln Pro Gly 650 655
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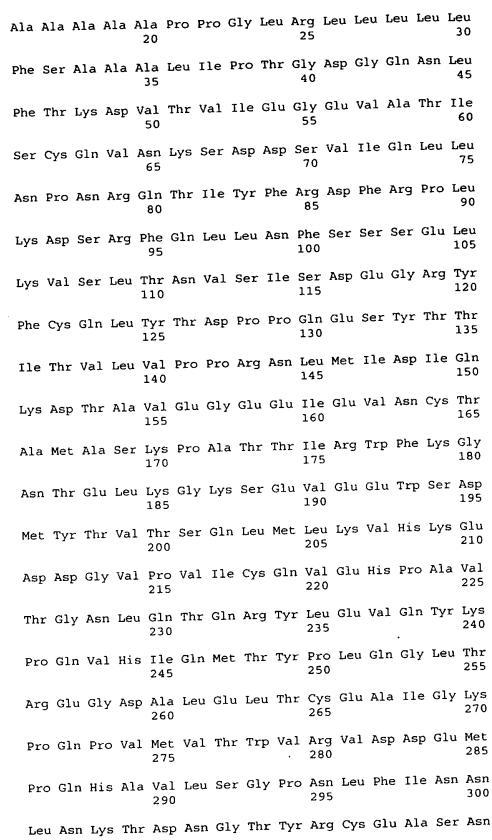
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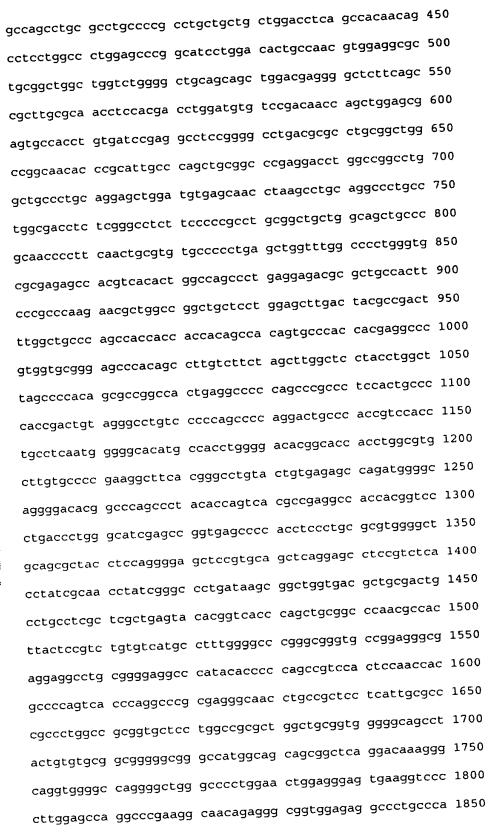
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1	Pro Pro Thr Thr Ile 335	Pro Pro	Pro Thr 1	Thr Thr Thr Thr 340	Thr Thr 345									
	Thr Thr Thr Thr 350	Thr Ile	Leu Thr	lle Ile Thr Asp 355	Ser Arg 360									
	Ala Gly Glu Glu Gly 365	Ser Ile	Arg Ala	Val Asp His Ala 370	Val Ile 375									
	Gly Gly Val Val Ala 380	Val Val	Val Phe	Ala Met Leu Cys 385	Leu Leu 390									
	Ile Ile Leu Gly Arg	Tyr Phe	Ala Arg	His Lys Gly Tho 400	Tyr Phe 405									
	Thr His Glu Ala Lys	)												
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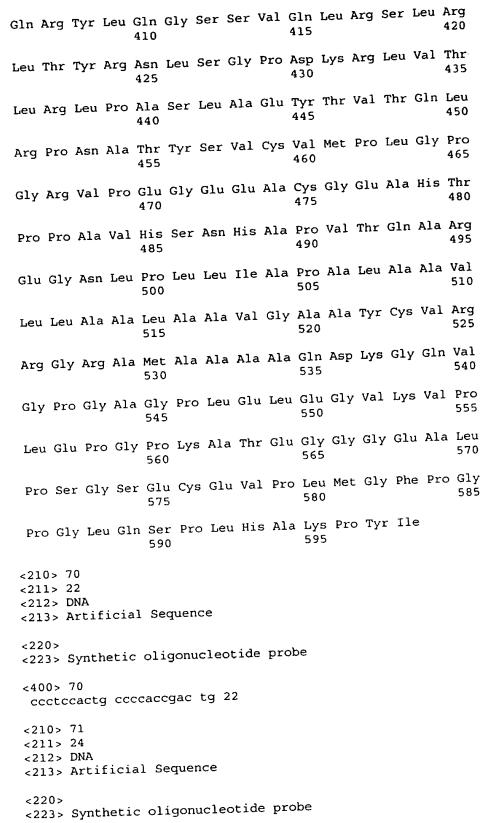
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Leu Leu Ala Leu Glu Pro Gly Ile Leu Asp Thr Ala Asn Val Glu

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Leu Phe Ser Arg Leu Arg Asn Leu His Asp Leu Asp Val Ser 140 145	Asp 150
Asn Gln Leu Glu Arg Val Pro Pro Val Ile Arg Gly Leu Arg	165
Leu Thr Arg Leu Arg Leu Ala Gly Asn Thr Arg Ile Ala Glo 170 175	1 Leu 180
Arg Pro Glu Asp Leu Ala Gly Leu Ala Ala Leu Gln Glu Leu 185 190	1 Asp 195
Val Ser Asn Leu Ser Leu Gln Ala Leu Pro Gly Asp Leu Se 200 205	r Gly 210
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Pro Pro Lys Asn Ala Gly Arg Leu Leu Leu Glu Leu Asp Ty 260 265	
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Pro Gln Asp Cys Pro Pro Ser Thr Cys Leu Asn Gly Gly 7	
His Leu Gly Thr Arg His His Leu Ala Cys Leu Cys Pro (	
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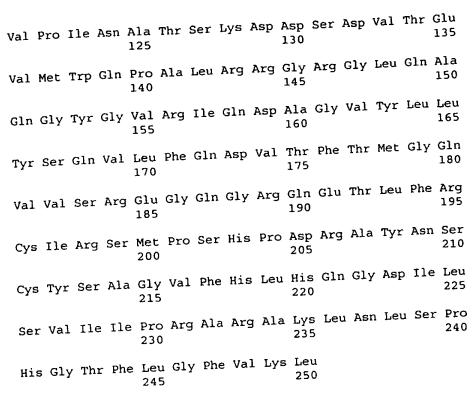
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Cys Cys Asp Pro Gly Thr Ser Met Tyr Pro Ala Thr Ala Val Pro

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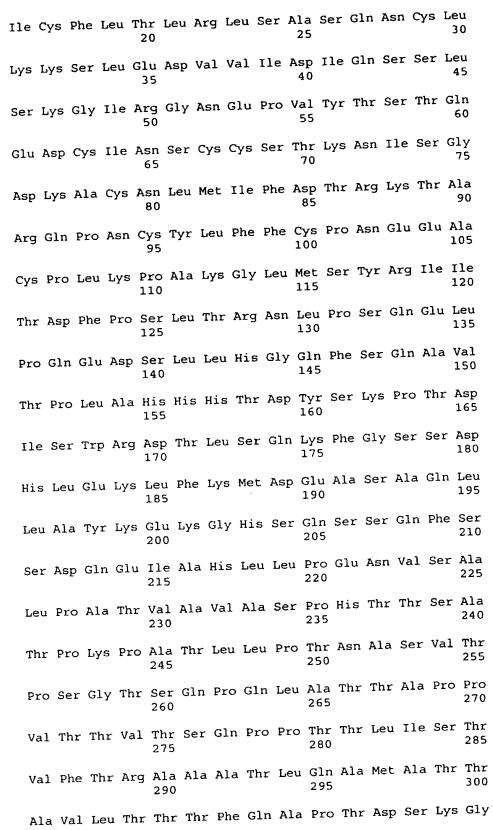
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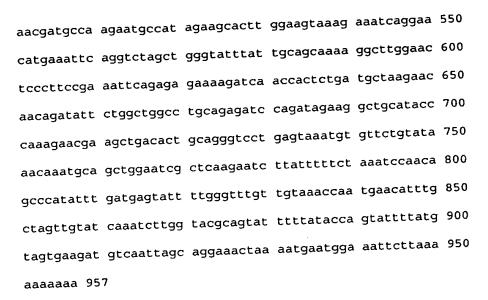
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Leu Phe Gly Val	Leu 395	Phe	Leu	Val	Ile	Gly 400	Leu	Val	Leu	Leu	Gly 405
Arg Ile Leu Ser	Glu 410	Ser	Leu	Arg	Arg	Lys 415	Arg	Tyr	Ser	Arg	Leu 420
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Gln Lys Cys Asp His Trp Thr Pro Cys Pro Ser Asp Thr Tyr Ala

Tyr Arg Leu Leu Ser Gly Gly Gly Arg Ser Lys Tyr Ala Lys Ile

Cys Phe Glu Asp Asn Leu Leu Met Gly Glu Gln Leu Gly Asn Val

Ala Arg Gly Ile Asn Ile Ala Ile Val Asn Tyr Val Thr Gly Asn 115

Val Thr Ala Thr Arg Cys Phe Asp Met Tyr Glu Gly Asp Asn Ser 125

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Leu Phe Met Val Thr Tyr Asp Asp Gly Ser Thr Arg Leu Asn Asn

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